Seattle-Tacoma International Airport Benchmarks

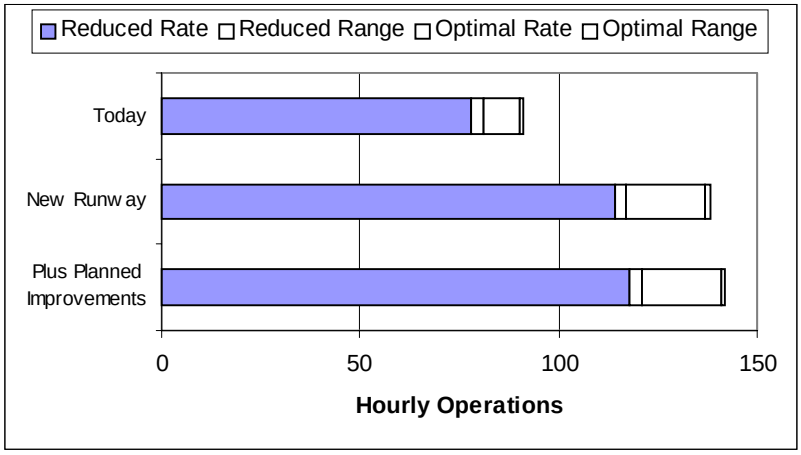
- The current capacity benchmark at Seattle-Tacoma International is 90-91 flights per hour in good weather.
- Current capacity falls to 78-81 flights (or fewer) per hour in adverse weather conditions, which may include poor visibility, unfavorable winds or heavy precipitation.
- While only about 1% of all flights at Seattle are delayed more than 15 minutes from their estimated flight plan arrival time, the airport operator emphasizes that almost a third of airline flights arrive more than 15 minutes later than scheduled.
- A new runway, planned for completion in 2006, is expected to improve Seattle's capacity benchmark by 52% (to 137-138 flights per hour) in good weather and by 46% (to 114-117 flights per hour) in adverse weather. This assumes that airspace, ground infrastructure and environmental constraints allow full use of the new runway.
- In addition to the new runway, technology and procedural improvements are expected to improve Seattle's capacity benchmark for good weather by a total of 57% (to 141-142 flights per hour) over the next 10 years. Similarly, the adverse weather capacity benchmark will increase by a total of 51% (to 118-121 flights per hour).
- These capacity increases could be brought about as a result of:
  - ADS-B/CDTI (with LAAS), which provides a cockpit display of the location of other aircraft and will help the pilot maintain the desired separation more precisely.
  - FMS/RNAV routes, which allow a more consistent flow of aircraft to the runway.
- Demand at Seattle is expected to grow by 17% over the next decade. Capacity is expected to meet or exceed the growth in demand, primarily due to the new runway. Thus, there should be fewer delays in the future.

SEA – Seattle-Tacoma International Airport

Airport Capacity Benchmarks – These values are for total operations achievable under specific conditions:

- **Optimum Rate** – Visual Approaches (VAPS), unlimited ceiling and visibility
- **Reduced Rate** – Most commonly used instrument configuration, below visual approach minima

Scenario	Optimum Rate	Reduced Rate
Today	**90-91**	**78-81**
New Runway	**137-138**	**114-117**
Plus planned improvements	**141-142**	**118-121**



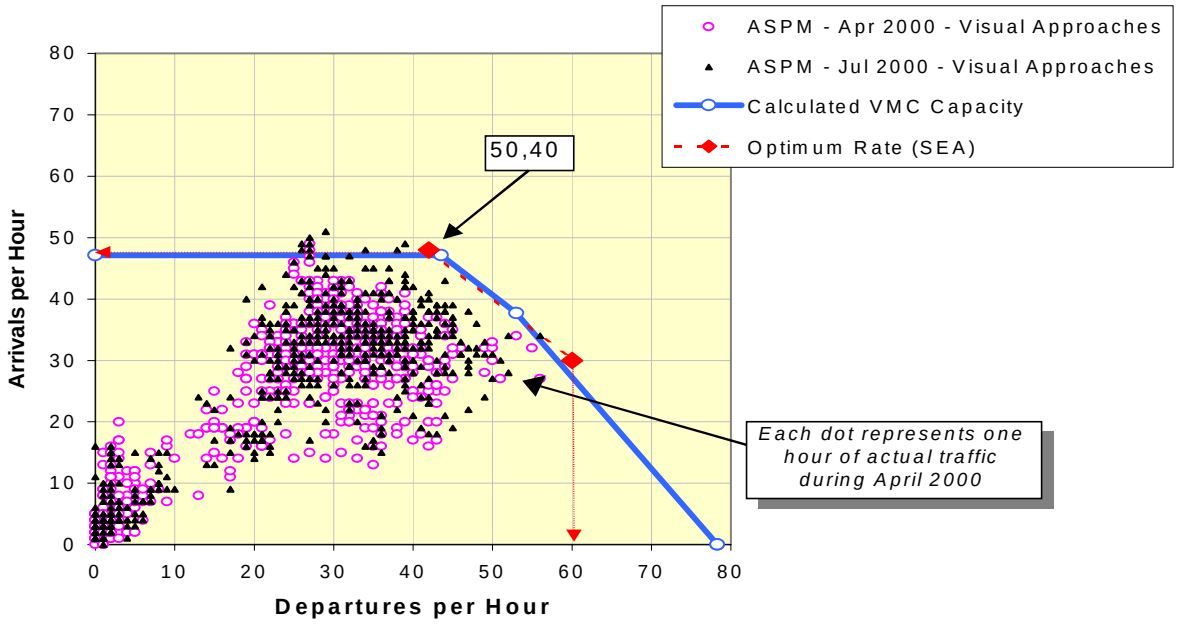
- The benchmarks describe an achievable level of performance for the given conditions, which can occasionally be exceeded. Lower rates can be expected under adverse conditions. Note: In some cases, facilities provided separate unbalanced maximum arrival and departure rates.
- Planned Improvements include:
  - ADS-B/CDTI (with LAAS) – provides a cockpit display of the location of other aircraft. This will help the pilot maintain the desired separation more precisely.
  - FMS/RNAV Routes – allows more consistent delivery of aircraft to the runway threshold.
- Benefits from Planned Improvements assume that all required infrastructure and regulatory approvals will be in place. This includes aircraft equipage, airspace design, environmental reviews, frequencies, training, etc. as needed.
- **Note:** These benchmarks do not consider any limitation on airport traffic flow that may be caused by non-runway constraints at the airport or elsewhere in the NAS. Such constraints may include:
  - Taxiway and gate congestion, runway crossings, slot controls, construction activity
  - Terminal airspace, especially limited departure headings
  - Traffic flow restrictions caused by en route miles-in-trail restrictions, weather or congestion problems at other airports

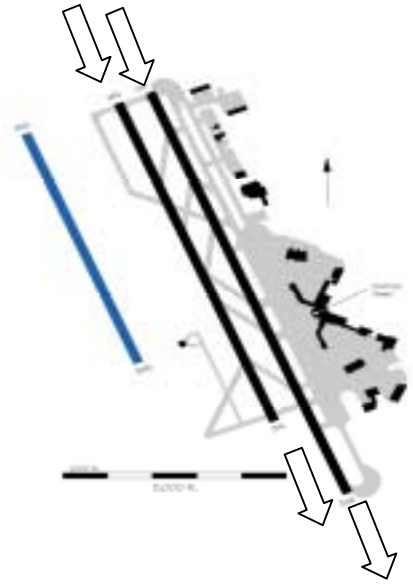
These values were calculated for the Capacity Benchmarking task and should not be used for other purposes, particularly if more detailed analyses have been performed for the individual programs.

The list of Planned Improvements and their expected effects on capacity does not imply FAA commitment to or approval of any item on the list.

Current Operations – Optimum Rate

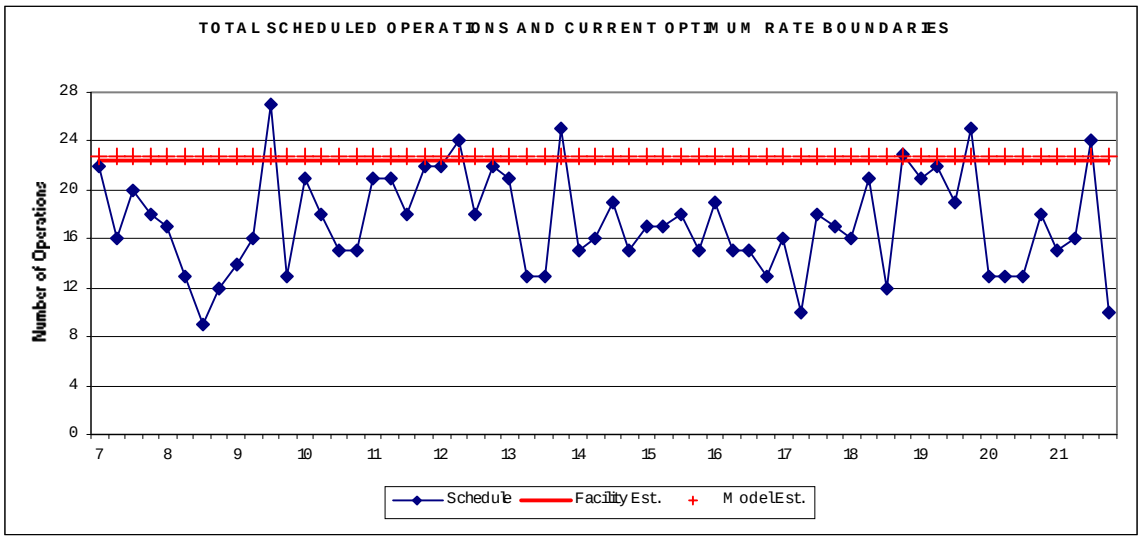
- Visual approaches, visual separation – Optimum Rate of (50,40) was reported by the facility
- ASPM data is actual hourly traffic counts for the month of April 2000 for Visual Approach conditions. This data includes other runway configurations and off-peak periods.
- Solid line represents the calculated airport capacity during a busy hour, and the tradeoff between arrivals and departure rates
- The capacity model can only approximate the complex operations at SEA

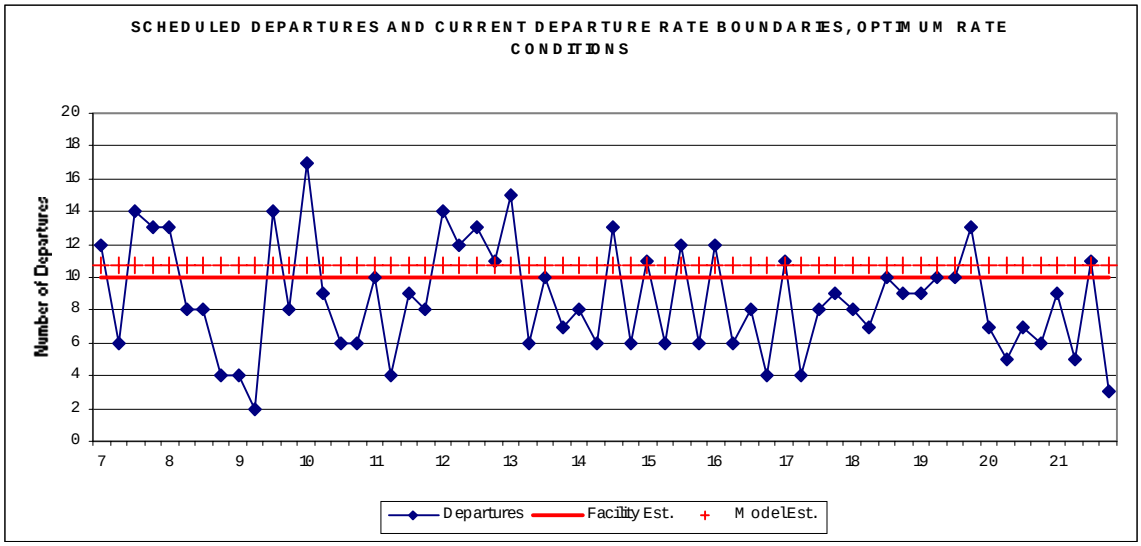


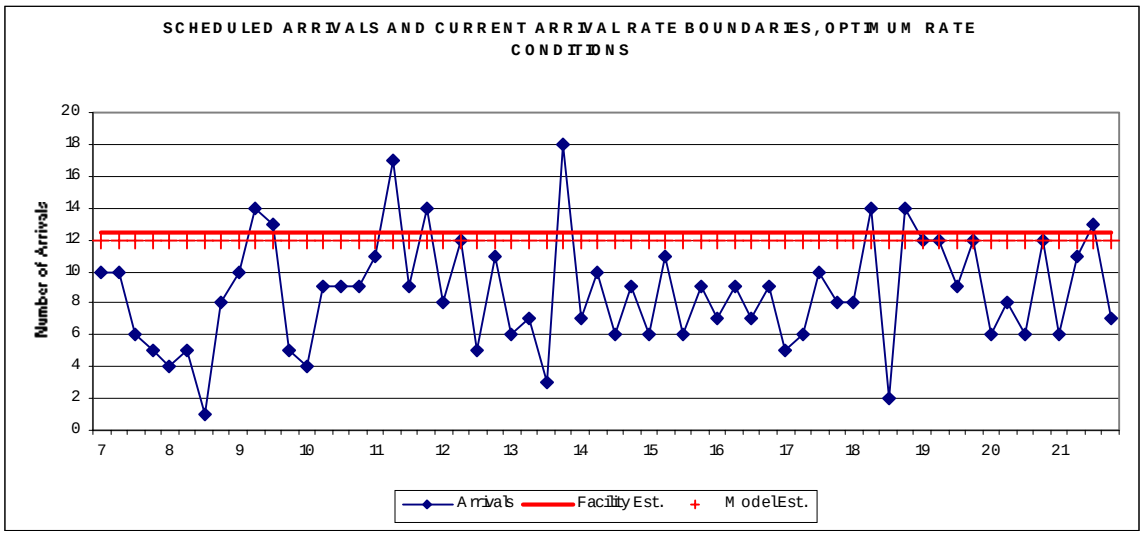


SEA – Seattle-Tacoma International Airport

Scheduled Departures and Arrivals and Current Departure and Arrival Rate Boundaries (15-Minute Periods) Under Optimum Rate Conditions

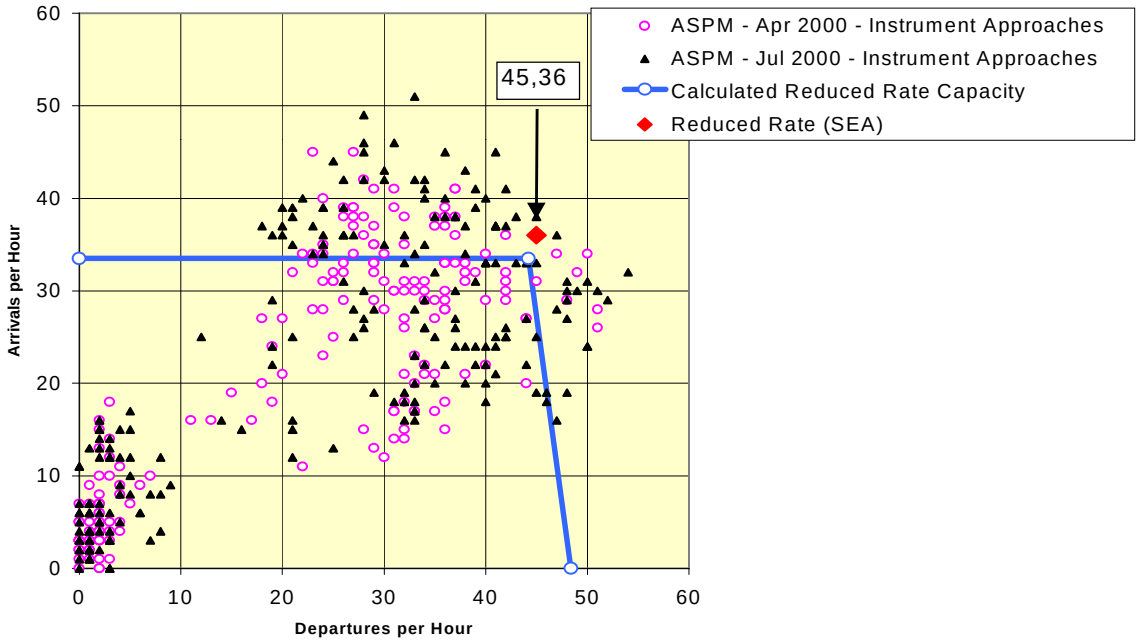


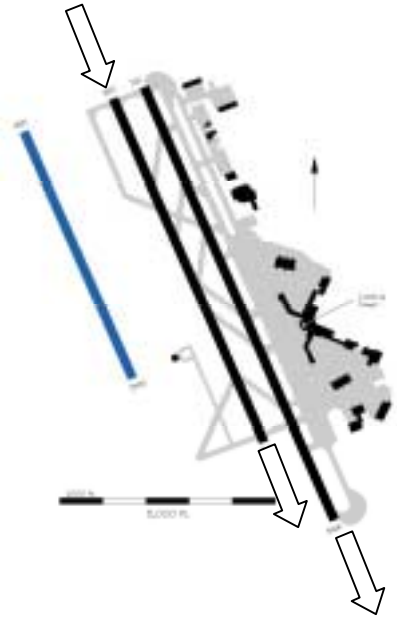




Current Operations – Reduced Rate

- Instrument approaches (below Visual Approach Minima)
- Reduced Rate of (36,45) was reported by the facility
- ASPM data for “Instrument Approaches” can include marginal VFR, with higher acceptance rates
- Chart below represents observed traffic and expected rates in terms of operations per hour





SEA – Seattle-Tacoma International Airport

Scheduled Departures and Arrivals and Current Departure and Arrival Rate Boundaries (15-Minute Periods) Under Reduced Rate Conditions